

The Effect of CAR, FDR, NPF, and BOPO on ROA for BUS and BPRS in 2020–2024

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Abstract

The Islamic banking industry in Indonesia continues to grow as an integral component of the national financial system, with bank soundness reflected through profitability indicators, particularly Return on Assets (ROA), which serve as important measures for stakeholders. This research examines the effects of Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), Non-Performing Financing (NPF), and Operating Expenses to Operating Income (BOPO) on Return on Assets (ROA) in Islamic Commercial Banks (Bank Umum Syariah / BUS) and Islamic Rural Banks (Bank Pembiayaan Rakyat Syariah / BPRS) during the 2020–2024 period. A quantitative approach was employed using secondary data obtained from annual financial reports published by the Financial Services Authority (Otoritas Jasa Keuangan / OJK). The data were analyzed using multiple linear regression, preceded by classical assumption tests and followed by hypothesis testing through t-tests and F-tests. The results indicate that CAR has no significant effect on ROA, suggesting that capital adequacy in BUS and BPRS primarily functions as a risk mitigation buffer and a mechanism for fulfilling regulatory requirements rather than directly improving profitability. In contrast, FDR has a negative and statistically significant effect on ROA, indicating that higher financing levels relative to third-party funds may increase liquidity risk and operational costs, thereby reducing bank profitability. The findings also reveal that NPF has no significant effect on ROA, implying that problematic financing remains at manageable levels through allowance for impairment losses and financing restructuring policies. BOPO has no significant effect on ROA, indicating that operational efficiency in BUS and BPRS remained relatively stable during the study period and did not significantly influence profitability.

INTRODUCTION

Indonesia's sharia-based economic system has advanced rapidly in the current era of economic development (Firdaus, 2025; Hidayat et al., 2024; Huda & Yuliati, 2025; A. W. Irawan, 2024; H. Irawan, 2023; Primadhany et al., 2025; Rahma et al., 2026; Yahya & Walid, 2024). As a predominantly Muslim nation, Indonesia holds significant potential to improve performance in the sharia financial sector, including the sharia banking industry. A sharia bank is defined as a financial entity whose primary business activities involve financing and services in conducting its operations, including the circulation and payment of money (Sudarsono, 2008).

Islamic banking can be defined as a financial institution that operates based on Islamic legal principles and plays a strategic role in supporting the development of the Indonesian economy (Firdaus, 2025; Harahap et al., 2023; A. W. Irawan, 2024; H. Irawan, 2023; Nuswantoro, 2024; Pamuji et al., 2022; Panjaitan et al., 2024; Rahma et al., 2026). The

important role of Islamic banking is evident as one of the outcomes of Indonesia's economic development. This is because Islamic banks function as financial institutions that collect funds from the public and distribute these funds into economic activities in accordance with Islamic principles (Sudarsono, 2003).

Financial performance is generally determined by several factors, such as CAR (Capital Adequacy Ratio), FDR (Financing to Deposit Ratio), NPF (Non-Performing Financing), and BOPO (Operating Expenses to Operating Income), while profitability serves as a parameter for measuring financial performance. One of the performance ratios that determines a bank's capital adequacy is CAR, which functions as a buffer against assets that may generate risks, such as the distribution of large or small amounts of financing by banks (Sudarmawanti and Pramono, 2017).

The Capital Adequacy Ratio (CAR) is a ratio that describes a bank's capacity to provide capital to absorb risks associated with financing, investments, securities, and receivables from other banks. This capacity is supported by internal capital as well as external funding sources, such as public deposits, loan facilities, and other sources of funds (Dendawijaya, 2009). Maintaining an adequate CAR serves as a protection mechanism for customers while supporting the overall financial health of the bank (Fachri & Mahfudz, 2021). A high CAR indicates that a bank has sufficient capital capacity to withstand business risks.

The FDR serves as a parameter for assessing a bank's ability to maintain a balance between fund collection and financing distribution, namely the bank's capability to respond to financing demands by managing its assets effectively to achieve optimal performance (Moorey et al., 2020). Furthermore, FDR also serves as an indicator for determining the extent of bank funds allocated in the form of financing (Darsita, 2020). The FDR ratio is considered ideal when it is within the range of 80%–110%, which is regarded as an optimal level according to Buyung (2009), as cited by Fachri and Mahfudz (2021). An increase in FDR indicates a more optimal implementation of the banking sector's intermediation function.

Non-Performing Financing (NPF) is an indicator used to assess a bank's financial performance by evaluating potential losses arising from the possibility that debtors fail to fulfill their obligations to repay financing provided by the bank (Husaeni, 2017). In other words, NPF describes problematic financing or financing with low collectibility quality. A higher NPF ratio indicates a lower ability of the bank to manage problematic financing. This condition has the potential to reduce the level of trust and prudence of banking institutions in conducting their business activities in subsequent periods, including financing distribution. Therefore, the level of NPF in the previous period can affect the bank's profitability level (Setiawan & Indriani, 2016).

According to Dendawijaya (2009), Operating Expenses to Operating Income (BOPO) is a ratio used to measure a bank's operational efficiency by comparing total operating expenses with total operating income. The BOPO ratio is used as a parameter to assess a company's ability to conduct its operational activities efficiently (Adiputra, 2017).

An increase in Return on Assets (ROA) indicates that a company has better opportunities for future development due to its ability to increase profit-generating potential. Therefore, maintaining bank profitability is crucial for sustaining financial performance. Financial ratio analysis illustrates the mathematical relationship between one amount and another in financial statements through the development of standardized bank performance

measures, thereby providing indications, insights, and information regarding a bank's financial position and condition (Wahyuningsih and Hadinugroho, 2004).

Previous studies have shown that CAR (Capital Adequacy Ratio) has an influence on ROA, as reported by Lestari Puspita Dewi and Liya Megawati (2021), Ula Aulia Rahmawati, Mohammad Balafif, and Susi Tri Wahyuni (2021), as well as Wafiq Alifiati Nurul Aini and Dedi Suselo (2022). However, other studies have found that CAR does not contribute significantly to changes in ROA, as reported by Iqbal Ramadhani (2018), Rofiul Wahyudi (2020), Dina Amalia and Nana Diana (2022), Lia Aqsha Maulla and Wirman (2022), Retno Puji Astuti (2022), and Risqia Putri and Sri Kania Dewi Yana (2024). Regarding FDR (Financing to Deposit Ratio), studies have indicated a significant influence on ROA, as found by Iqbal Ramadhani (2018), Lia Aqsha Maulla and Wirman (2022), and Uswatun Khasanah, Indanazulfa Qurrota A'yun, Muhammad Anif Afandi, and Silvya Shinta Maestri (2022). Conversely, studies reporting that FDR does not affect ROA include those conducted by Rofiul Wahyudi (2020), Lestari Puspita Dewi and Liya Megawati (2021), Ula Aulia Rahmawati, Mohammad Balafif, and Susi Tri Wahyuni (2021), Dina Amalia and Nana Diana (2022), Retno Puji Astuti (2022), Wafiq Alifiati Nurul Aini and Dedi Suselo (2022), and Risqia Putri and Sri Kania Dewi Yana (2024). Furthermore, studies examining NPF (Non-Performing Financing) have found that NPF affects ROA, as demonstrated by Iqbal Ramadhani (2018), Ula Aulia Rahmawati, Mohammad Balafif, and Susi Tri Wahyuni (2021), as well as Uswatun Khasanah, Indanazulfa Qurrota A'yun, Muhammad Anif Afandi, and Silvya Shinta Maestri (2022). Meanwhile, studies showing that NPF does not affect ROA include those conducted by Rofiul Wahyudi (2020), Lestari Puspita Dewi and Liya Megawati (2021), Lia Aqsha Maulla and Wirman (2022), Retno Puji Astuti (2022), Wafiq Alifiati Nurul Aini and Dedi Suselo (2022), and Risqia Putri and Sri Kania Dewi Yana (2024). For the BOPO variable, studies have found that BOPO affects ROA, as reported by Iqbal Ramadhani (2018), Rofiul Wahyudi (2020), Ula Aulia Rahmawati, Mohammad Balafif, and Susi Tri Wahyuni (2021), Dina Amalia and Nana Diana (2022), Lia Aqsha Maulla and Wirman (2022), and Retno Puji Astuti (2022). However, Lestari Puspita Dewi and Liya Megawati (2021) found that BOPO does not have an effect on ROA.

Based on the literature review, several research gaps have been identified that motivate this study. First, previous studies have produced inconsistent findings regarding the effects of CAR, FDR, NPF, and BOPO on ROA in Islamic banking, indicating the need for further investigation. Second, most previous studies have focused on Islamic Commercial Banks, whereas studies incorporating Islamic Rural Banks (BPRS) into the analysis remain limited. Third, research covering the 2020–2024 period, which represents the post-pandemic economic recovery phase and its implications for Islamic banking performance, remains relatively scarce. Fourth, limited studies have simultaneously examined the four variables (CAR, FDR, NPF, and BOPO) within the context of both Islamic Commercial Banks and BPRS in Indonesia.

The novelty of this research lies in several aspects. First, this study simultaneously analyzes the effects of CAR, FDR, NPF, and BOPO on ROA in Islamic Commercial Banks and Islamic Rural Banks (BPRS), whereas previous studies have generally focused only on Islamic Commercial Banks. Second, this study covers the 2020–2024 period, which includes the post-pandemic recovery phase, thereby providing a more comprehensive understanding of Islamic banking performance dynamics amid changing economic conditions. Third, this study

utilizes a sample of 150 observations obtained from the annual reports of Islamic Commercial Banks and BPRS, providing a broader and more representative dataset compared with previous studies. Fourth, this study contributes to the development of Islamic banking financial performance literature by integrating four key financial ratios that determine bank profitability.

Based on the discussion above, this study aims to analyze and determine the effects of CAR, FDR, NPF, and BOPO on ROA in Islamic Commercial Banks and Islamic Rural Banks (BPRS) during the 2020–2024 period. This research is expected to provide both theoretical and practical benefits. Theoretically, this study contributes to the development of literature on Islamic banking financial management, particularly regarding the effects of capital adequacy, liquidity, financing risk, and operational efficiency on profitability. It also provides empirical evidence that can serve as a reference for future studies on Islamic banking financial performance. Practically, this research provides benefits for Islamic bank management as evaluation material for formulating financial policies, particularly related to capital adequacy management, liquidity management, financing risk control, and operational efficiency improvement to enhance profitability. For investors, this research provides a basis for considering financial ratios in investment decision-making in Islamic banking. For regulators, particularly the Financial Services Authority (Otoritas Jasa Keuangan/OJK), this study provides input for developing policies that support improvements in Islamic banking financial performance. Furthermore, this research can serve as a reference for academics conducting future studies by incorporating additional variables, such as Net Interest Margin (NIM) or macroeconomic factors, extending the research period, or applying alternative analytical methods, such as panel data regression or path analysis.

METHOD

. The research employed a quantitative method using numerical data to analyze the effects of Return on Assets (ROA), Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), Non-Performing Financing (NPF), and Operating Expenses to Operating Income (BOPO). This study was classified as associative research because it examined the relationships between independent variables and the dependent variable. The study utilized secondary data obtained from the annual reports of Islamic Commercial Banks (Bank Umum Syariah) and Islamic Rural Banks (BPRS).

The population in this study consisted of Islamic Commercial Banks and Islamic Rural Banks in Indonesia. The sampling technique applied was purposive sampling, with sample selection based on specific criteria aligned with the research objectives. The sample comprised annual report data from Islamic Commercial Banks and Islamic Rural Banks during the 2020–2024 period, resulting in 150 observations.

The data analysis was conducted using multiple linear regression through the SPSS program. Before performing multiple linear regression analysis and partial significance tests (t-tests), classical assumption tests were conducted to ensure data validity, including normality, autocorrelation, multicollinearity, and heteroscedasticity tests.

RESULTS AND DISCUSSION

Descriptive Statistics is an initial analysis method intended to simplify and present the main characteristics of a data set concisely and clearly. Complex data can be broken down into

statistical measures such as average values, minimum and maximum limits, standard deviations, and other distribution indicators. Of the 150 samples in this study, not all were used in further analysis. This was due to the researchers finding outliers or extreme values, which prevented the normality assumption from being met. This reduced the sample size to 88.

Table 1. Descriptive Statistics of Research Variables (Before and After Outlier Removal)

Descriptive Statistics					
Variable	N	Minimum	Maximum	Mean	Std. Deviation
CAR	150	-0.520000	329.090000	40.288822	43.612348
FDR	150	0.000000	262.740000	90.122978	34.293934
NPF	150	0.00	965.00	12.4046	79.34895
BOPO	150	0.000000	450.580000	95.800311	55.224640
ROA	150	-46.380000	11.430000	0.984622	5.290993
Valid N (listwise)	150				

Descriptive Statistics					
Variable	N	Minimum	Maximum	Mean	Std. Deviation
CAR	88	15.21000	149.68000	33.3990152	22.38487565
FDR	88	14.78000	196.73000	86.4672348	26.48344088
NPF	88	0.01000	18.63000	3.5835227	3.27518186
BOPO	87	57.07	103.93	84.4482	10.62460
ROA	88	0.17	50.00	4.7264	10.40631
Valid N (listwise)	87				

Source: Processed secondary data from annual reports of Islamic Commercial Banks and Islamic Rural Banks (BPRS) published by the Financial Services Authority (OJK), 2020–2024.

The following is an explanation of the research variables that form the basis of this research:

1. Capital Adequacy Ratio (CAR) as the first independent variable shows an average value of 33.3990152 with a standard deviation of 22.38487565. With a minimum value of 15.21000. While the maximum value is 149.68000.
2. Financing to Deposit Ratio (FDR) as the second independent variable shows an average of 86.4672348 with a standard deviation of 26.48344088. With a minimum value of 14.78000. Meanwhile, the maximum value of 196.73000 is obtained from.
3. Non-Performing Financing (NPF) as the third independent variable shows an average value of 3.5835227 with a standard deviation of 3.27518186. With a minimum value of 0.01000. While the maximum value is 18.63000.
4. Operating Expenses to Operating Income (BOPO) as the fourth independent variable shows an average of 84.4482 with a standard deviation of 10.62460. With a minimum value of 57.07. While the maximum value is 103.93.
5. Return on Assets (ROA) as the dependent variable shows an average value of 4.7264 with a standard deviation of 10.62460. With a minimum value of 0.17, while the maximum value is 50.00.

Table 2. Normality Test Using Skewness and Kurtosis

Descriptive Statistics					
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Unstandardized Residual	88	.336	.257	-.311	.508
Valid N (listwise)	88				

Source: Processed secondary data (SPSS output), 2020–2024.

Referring to the results of the normality test using the skewness and kurtosis ratios, the skewness value was obtained at 0.336 with a standard error of 0.257 so that the Z skewness value was 1.3. The kurtosis value was -0.311 with a standard error of 0.508 so that the Z kurtosis value was -0.61, thus, it can be seen that the data is normally distributed.

Table 3. Multicollinearity Test Results (Tolerance and VIF)

Coefficients ^a		
Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)	—	—
CAR	.841	1.189
FDR	.856	1.168
NPF	.946	1.057
BOPO	.950	1.052

a. Dependent Variable: ROA

Source: Processed secondary data (SPSS output), 2020–2024.

The output results of the multicollinearity test show collinearity statistics, namely tolerance and variance Inflation Factor (VIF) for each other variable, while VIF shows how much the variance of a regression coefficient changes due to correlation with other variables. The tolerance value in this study is between 0.841 to 0.950 (which indicates that the tolerance value is > 0.10) with a VIF value of 1.052 to 1.189 (which indicates that the VIF value is <10). High tolerance values and low VIF values indicate that there is no multicollinearity in variables X1, X2, X3, X4 and Variable Y. Therefore, it can be concluded that there is no multicollinearity in this study, so it can be continued to the next statistical test.

Table 4. Heteroscedasticity Test Results (Glejser Test)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.020	.279	—	-.070	.944
CAR	.000	.001	-.039	-.331	.741
FDR	.001	.001	.109	.932	.354
NPF	-4.116E-5	.009	.000	-.004	.997
LagBOPO	.004	.003	.146	1.307	.194

a. Dependent Variable: AbsRes

Source: Processed secondary data (SPSS output), 2020–2024.

The heteroscedasticity test results indicate no heteroscedasticity between the tested variables. This is evident from the significance values of each variable, which are >0.05, with CAR having a significance value of 0.742, FDR having a significance value of 0.354, NPF having a significance value of 0.997, and BOPO having a significance value of 0.195. Therefore, it can be concluded that this study does not contain heteroscedasticity and can proceed to the next statistical test.

Table 5. Autocorrelation Test Results (Durbin-Watson)

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.393 ^a	.154	.113	9.41328	2.014

a. Predictors: (Constant), BOPO, NPF, FDR, CAR

b. Dependent Variable: ROA

Source: Processed secondary data (SPSS output), 2020–2024.

The results of the Durbin-Watson Test, as described by Gujarati & Porter (2009), include several important statistical values, including dL (lower limit), dU (upper limit), DW (Durbin Watson), 4-dU (critical value for positive autocorrelation), and 4-dL (critical value for negative autocorrelation).

The Dw value resulting from this analysis is 2.014. Based on this value, it can be concluded that the DW value is between 1.7493 and 2.2407, so it can be concluded that there is no autocorrelation in the residuals of the regression model.

Table 6. Multiple Linear Regression Coefficients

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	19.530	9.415	—	2.074	.041
	CAR	.049	.049	.109	.984	.328
	FDR	-.131	.041	-.349	-3.182	.002
	NPF	.029	.317	.009	.091	.928
	BOPO	-.065	.098	-.069	-.663	.509

a. Dependent Variable: ROA

Source: Processed secondary data (SPSS output), 2020–2024.

The regression equation obtained

$$Y = 19.530 + 0.049X_1 - 0.131X_2 + 0.029X_3 - 0.065X_4$$

Based on the regression equation above, it can be analyzed as follows:

1. B1 CAR: A positive coefficient of 0.049 indicates a positive relationship between leverage and firm value. In other words, every one-unit increase in CAR is associated with a 0.049-unit increase in ROA.
2. B2 FDR: A negative coefficient of 0.131 indicates a negative relationship between FDR and ROA. In other words, every one-unit increase in FDR is associated with a 0.131-unit decrease in ROA.

3. B3 NPF: A positive coefficient of 0.29 indicates a positive relationship between NPF and ROA, in other words, every increase of one unit of NPF is associated with an increase of 0.029 in ROA.
4. B4 BOPO: A negative coefficient of 0.65 indicates a negative relationship between BOPO and ROA. In other words, every one-unit increase in BOPO is associated with a 0.65-unit decrease in ROA.

Table 7. F-Test Results

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1327.564	4	331.891	3.746	.008 ^b
	Residual	7266.008	82	88.610	—	—
	Total	8593.572	86	—		

a. Dependent Variable: ROA

b. Predictors: (Constant), BOPO, NPF, FDR, CAR

Source: Processed secondary data (SPSS output), 2020–2024.

Based on the results of the F test, a significance value of 0.008 was obtained, providing information that the model has fulfilled the model suitability test (goodness of fit), because the significance value of the F test is below 0.05.

Table 8. Coefficient of Determination (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.393 ^a	.154	.113	9.41328

a. Predictors: (Constant), BOPO, NPF, FDR, CAR

Source: Processed secondary data (SPSS output), 2020–2024.

Based on the coefficient of determination (R^2) test, it can be concluded that the regression model involving the CAR, FDR, NPF, and BOPO variables is able to explain all the variations that occur in ROA, namely 15.4%, meaning that 84.6% of the remaining variation is explained by other variables outside the model used in this study.

Table 9. T-Test Results (Partial Hypothesis Testing)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1	(Constant)	19.530	9.415	—	2.074 .041
	CAR	.049	.049	.109	.984 .328
	FDR	-.131	.041	-.349	- 3.182 .002
	NPF	.029	.317	.009	.091 .928
	BOPO	-.065	.098	-.069	-.663 .509

a. Dependent Variable: ROA

Source: Processed secondary data (SPSS output), 2020–2024.

Based on the hypothesis test results table, the following data analysis results were obtained:

1. The results of the t-test on the CAR variable with a t-value of 0.984 and a p-value of 0.328 ($0.328 > 0.05$) partially indicate that there is no significance in the CAR variable in influencing ROA. H_1 is rejected.
2. The results of the t-test on the FDR variable with a t-value of -3.182 and a p-value of 0.002 ($0.002 < 0.05$) partially indicate that the FDR variable has a significant effect on ROA. H_2 is accepted.
3. The results of the t-test on the NPF variable with a t-value of 0.091 and a p-value of 0.928 ($0.928 > 0.05$) based on partial analysis indicate that there is no significance in the NPF variable in influencing ROA. H_3 is rejected.
4. The results of the t-test on the BOPO variable with a t-value of -0.664 and a p-value of 0.509 ($0.509 > 0.05$) based on partial analysis indicate that there is no significance in the BOPO variable in influencing ROA. H_4 is rejected.

CONCLUSION

Based on the results of the analysis and discussion regarding the effects of the Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), Non-Performing Financing (NPF), and Operating Expenses to Operating Income (BOPO) on Return on Assets (ROA) in Islamic Commercial Banks (Bank Umum Syariah) and Islamic Rural Banks (BPRS) during the 2020–2024 period, the following conclusions were drawn. First, CAR did not have a significant effect on ROA. This indicates that the capital adequacy level of Islamic Commercial Banks and BPRS during the study period primarily functioned as a risk buffer and as compliance with regulatory requirements rather than as a factor that directly increased profitability. Second, FDR had a negative and significant effect on ROA. This finding indicates that excessively high financing distribution relative to third-party funds may increase liquidity risk and financing-related costs, thereby reducing banks' ability to generate profits. Third, NPF did not have a significant effect on ROA, indicating that the proportion of non-performing financing in Islamic Commercial Banks and BPRS remained within manageable levels and was mitigated through impairment loss reserves and financing restructuring policies. Fourth, BOPO did not have a significant effect on ROA, indicating that the operational efficiency of Islamic Commercial Banks and BPRS remained relatively stable during the study period and did not significantly influence profitability.

Based on the conclusions, several practical and academic implications can be proposed. For the management of Islamic Commercial Banks and BPRS, although CAR was not proven to have a significant effect on ROA, banks are still advised to maintain an optimal level of capital adequacy as part of long-term risk mitigation strategies, considering that strong capital remains essential for addressing potential economic shocks. Furthermore, management should carefully manage the FDR ratio to maintain an appropriate level, as the findings of this study indicate that excessively high FDR may increase liquidity risk and financing costs, which can ultimately reduce profitability. Efforts to improve operational efficiency should also continue, even though BOPO did not show a significant effect, because efficiency remains an important factor in maintaining the competitiveness of the Islamic banking industry. For investors, the results of this study indicate that FDR can serve as an important indicator for assessing liquidity risk before making investment decisions in Islamic banking, while CAR, NPF, and BOPO can

be considered supporting indicators. Meanwhile, regulators, particularly the Financial Services Authority (Otoritas Jasa Keuangan/OJK), are advised to continue monitoring FDR levels in Islamic Commercial Banks and BPRS periodically due to their negative relationship with profitability, while strengthening policies that encourage operational efficiency improvements and effective non-performing financing management to maintain the stability of the Islamic banking industry. Finally, future researchers are encouraged to incorporate additional variables that may influence ROA, such as Net Interest Margin (NIM), inflation rates, or gross domestic product (GDP), extend the observation period, and apply more advanced analytical methods, such as panel data regression or path analysis, to enrich the literature and provide a more comprehensive understanding of the determinants of Islamic banking financial performance in Indonesia.

REFERENCES

- Adiputra, F. (2017). Pengaruh CAR, NPF, FDR, dan BOPO terhadap profitabilitas (ROA dan ROE) pada bank umum syariah.
- Dendawijaya, L. (2009). *Manajemen perbankan*. Ghalia Indonesia.
- Fachri, M. F., & Mahfudz. (2021). Analisis pengaruh CAR, BOPO, NPF dan FDR terhadap ROA (Studi pada bank umum syariah di Indonesia periode tahun 2016–2019). *Diponegoro Journal of Management*, 10(1), 1–10. <http://ejournal-s1.undip.ac.id/index.php/dbr>
- Firdaus, C. B. (2025). Integrating sharia financial mechanisms with Indonesia's halal economy: Opportunities, challenges, and strategies for sustainable growth. *Journal of Islamic Economic Insights*, 1(1), 14–28.
- Gujarati, D., & Porter, D. C. (2013). *Dasar-dasar ekonometrika* (Buku 2). Salemba Empat.
- Harahap, B., Risfandy, T., & Futri, I. N. (2023). Islamic law, Islamic finance, and sustainable development goals: A systematic literature review. *Sustainability*, 15(8), 6626.
- Hidayat, A., Akbar, W., Ardiansyah, M., & Ibrahim, E. A. B. (2024). The impact of sharia economics on the vision of a Golden Indonesia 2045. *Jurnal Ilmu Ekonomi dan Bisnis Islam*, 6(2), 116–140.
- Huda, S., & Yuliati, A. (2025). Strategies and challenges of development economy in realizing Sharia-based sustainable growth. *Winter Journal: IMWI Student Research Journal*, 6(1), 11–20.
- Husaeni, A. U. (2017). Analisis pengaruh dana pihak ketiga dan non-performing financing terhadap return on asset pada BPRS di Indonesia. *Equilibrium: Jurnal Ekonomi Syariah*, 5(1), 1–16.
- Irawan, A. W. (2024). The role of Sharia management in the development of products and services in Islamic banking in Indonesia. *Papua: International Journal of Sharia Business Management*, 1(1), 1–14.
- Irawan, H. (2023). The role of Islamic banks in developing a sharia-based economy in the digital era in Indonesia. *Journal of Islamic Economics Lariba*, 9(2), 435–452.
- Moorey, N. H., Sukimin, & Juwari. (2020). Pengaruh FDR, BOPO, NPF, dan CAR terhadap ROA pada PT Bank Syariah Mandiri periode 2012–2019. *Jurnal GeoEkonomi*, 11(1).
- Nasir, M. (2021). *Analisis pengaruh CAR, NPF, FDR terhadap kinerja keuangan bank umum syariah di Indonesia*.
- Nuswantoro, P. (2024). Encouraging economic growth through Islamic financial principles in Indonesia. *West Science Islamic Studies*, 2(2), 91–97.
- Pamuji, A. E., Supandi, A. F., & Sa'diyah, M. (2022). Islamic financial institutions as strengthening the economy of the ummah (Study on the application of shariah agreements

- in Islamic financial institutions). *OECONOMICUS Journal of Economics*, 7(1), 24–36.
- Panjaitan, N. K., Nurbaiti, N., & Daulay, A. N. (2024). Analysis of financial regulatory challenges for the development of Islamic banking in Indonesia. *Journal La Sociale*, 5(5), 1346–1357.
- Primadhany, E. F., Suttikornpadee, T., Amin, M., & Adawiyah, R. (2025). Sharia-based digital economic policies: A maqasid Shariah approach to achieving sustainable development. *Tribakti: Jurnal Pemikiran Keislaman*, 36(1), 25–42.
- Rahma, D. A., Awliya, W., & Bahrudin, M. (2026). Analysis of the development, implementation, and contribution of Islamic economics in Indonesia in improving social welfare and national economic stability in the modern era. *International Review of Islamic Studies in Economics and Finance*, 2(1).
- Setiawan, U. N. A., & Indriani, A. (2016). Pengaruh dana pihak ketiga (DPK), capital adequacy ratio (CAR), dan non-performing financing (NPF) terhadap profitabilitas bank syariah dengan pembiayaan sebagai variabel intervening. *Diponegoro Journal of Management*, 5(4), 1–11.
- Sudarmawanti, E., & Pramono, J. (2017). Pengaruh CAR, NPL, BOPO, NIM dan LDR terhadap ROA (Studi kasus pada bank perkreditan rakyat di Salatiga yang terdaftar di Otoritas Jasa Keuangan tahun 2011–2015). *Among Makarti*, 10(1), 1–8.
- Sudarsono. (2008). *Bank & lembaga keuangan syari'ah* (Cet. ke-2). Ekonisia.
- Wahyuningsih, dkk. (2017). Pengaruh CAR, NPF, FDR, BOPO, dan GWM terhadap laba perusahaan (ROA) pada bank umum syariah di Indonesia periode 2010–2015. *Journal of Accounting*, 3(3), 1–17.
- Yahya, M. H., & Walid, A. (2024). Sharia economy as the foundation of the people's economy to achieve a prosperous Indonesia. *Journal of Islamic Economic Development*, 2(1), 21–26.